



Contribution ID: 100

Type: **not specified**

## Investigating Double-Slit Dynamical X-ray Diffraction in Silicon Crystals

*Friday 20 June 2025 11:30 (20 minutes)*

An experimental investigation of double-slit dynamic X-ray diffraction in silicon crystals demonstrates that Young's interference fringes can be formed in the cross section of the reflected beam, depending on the distances between the monochromator and the slits, as well as between the slits themselves. The study reveals that the number of observable fringes is influenced by both the crystal thickness and the Bragg reflection order. This diffraction method offers potential applications for determining the refractive index of materials by measuring fringe displacement relative to the beam center, as well as for addressing other interference phenomena in the X-ray wavelength range.

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**Session Classification:** Oral Session S20-2